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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/528,812	03/23/2005	Kenichi Yamaguchi	268289US0PCT	4323
22850 7590 04/08/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER RAABE, CHRISTOPHER M				
ART UNIT 2879		PAPER NUMBER		
NOTIFICATION DATE 04/08/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/528,812

Applicant(s)

YAMAGUCHI ET AL.

Examiner

CHRISTOPHER M. RAABE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE-08)
- Paper No(s)/Mail Date 3/23/5
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiiki et al. (USPN 6077458).

With regard to claim 1,

Shiiki et al disclose in at least examples 1 (columns 7-9), 5 (see column 12), column 5, lines 40 to 55 and fig 1 a fluorescent substance for display unit, comprising: fluorescent substance matrix particles' a first activator which is localized in a surface layer (12) part of the fluorescent substance matrix particles' and a second activator which is uniformly dispersed in the fluorescent substance matrix particles (11).

With regard to claim 2,

Shiiki et al. disclose a fluorescent substance for display unit according to claim 1, wherein the fluorescent substance matrix particles are substantially formed of zinc sulfide.

With regard to claim 3,

Shiiki et al. disclose a fluorescent substance for display unit according to claim 1, wherein the fluorescent substance matrix particles are substantially formed of zinc sulfide having a crystal structure composed mainly of hexagonal crystal.

With regard to claim 4,

Shiiki et al. disclose a fluorescent substance for display unit according to claim 3, wherein the first activator is formed of at least one element selected from Cu and Au, and the second activator is formed of Al.

With regard to claim 5,

Shiiki et al. disclose a fluorescent substance for display unit according to claim 3, wherein the fluorescent substance is a green light-emitting fluorescent substance having a composition represented substantially by a general formula: $\text{ZnS}:\text{Cu}_a, \text{Al}_b$ (where, a and b each represent an amount in a range of $1 \times 10^{-5} \leq a \leq 1 \times 10^{-3}$ g and $1 \times 10^{-5} \leq b \leq 5 \times 10^{-3}$ g with respect to 1 g of zinc sulfide which is the fluorescent substance matrix).

With regard to claim 6,

Shiiki et al. disclose additionally in column 1, lines 5-10 a fluorescent substance for display unit according to claim 3, wherein the fluorescent substance is used for a color cathode ray-tube or a field emission type display unit.

With regard to claim 7,

Shiiki et al. disclose additionally in example 3 a fluorescent substance for display unit according to claim 1, wherein the fluorescent substance matrix particles are substantially formed of zinc sulfide having a crystal structure composed mainly of cubic crystal.

With regard to claim 8,

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Shiiki et al. disclose a fluorescent substance for display unit according to claim 7, wherein the first activator is formed of at least one element selected from Ag, Cu and Au, and the second activator is at least one element selected from Al and Cl.

With regard to claim 9,

Shiiki et al. disclose a fluorescent substance for display unit according to claim 7, wherein the fluorescent substance is a blue light-emitting fluorescent substance having a composition represented substantially by a general formula: $\text{ZnS:Ag}_c\text{, M}_d$ (where, M represents at least one type of element selected from Al and Cl, a and b each represent an amount in a range of $1 \times 10^{-5} \leq c \leq 2 \times 10^{-3}$ g and $1 \times 10^{-5} \leq d \leq 5 \times 10^{-3}$ g with respect to 1 g of zinc sulfide which is the fluorescent substance matrix).

With regard to claim 10,

Shiiki et al. disclose a fluorescent substance for display unit according to claim 7, wherein the fluorescent substance is a green light-emitting fluorescent substance having a composition represented substantially by a general formula: $\text{ZnS:Cu}_e\text{, Au}_f\text{, Al}_g$ (where, e, f and g each represent an amount in a range of $1 \times 10^{-5} \leq e \leq 1 \times 10^{-3}$ g, $0 \leq f \leq 2 \times 10^{-3}$ g, $1 \times 10^{-5} \leq e + f \leq 2 \times 10^{-3}$ g and $1 \times 10^{-5} \leq g \leq 5 \times 10^{-3}$ g with respect to 1 g of zinc sulfide which is the fluorescent substance matrix).

With regard to claim 11,

Shiiki et al. disclose additionally in at least column 1, lines 5-10 a fluorescent substance for display unit according to claim 7, wherein the fluorescent substance is used for a color cathode ray tube.

With regard to claim 12,

Shiiki et al. disclose in at least examples 1 (columns 7-9), 5 (see column 12), column 5, lines 40 to 55 and fig 1 a process for producing a fluorescent substance for display unit comprising fluorescent substance matrix particles containing a first activator and a second activator, comprising: containing uniformly the second activator in the fluorescent substance matrix particles' (11) and doping the first activator into the surface layer part (12) of the fluorescent substance matrix particles containing the second activator.

With regard to claim 13,

Shiiki et al. disclose a process for producing a fluorescent substance for display unit according to claim 12, wherein the first activator doping step has a step of adhering a metal element configuring the first activator or a compound containing the metal element to the surface of the fluorescent substance matrix particles and firing them in the adhered state.

With regard to claim 14,

Shiiki et al. disclose a process for producing a fluorescent substance for display unit according to claim 12, wherein the fluorescent substance matrix particles are substantially formed of zinc sulfide having a crystal structure composed mainly of hexagonal crystal or cubic crystal.

With regard to claim 15,

Shiiki et al. disclose a process for producing a fluorescent substance for display unit according to claim 14, wherein the first activator is formed of at least one element selected

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from Ag, Cu and Au, and the second activator is formed of at least one element selected from Al and Cl.

With regard to claim 16,

Shiiki et al. disclose additionally in at least figure 7 a color display unit, comprising: a fluorescent screen (71) having the fluorescent substance for display unit according to claim 1' an electron source (76) which irradiates an electron beam to the fluorescent screen to emit light' and an envelope (74) which vacuum-seals the electron source and the fluorescent screen.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiiki et al. (as above).

With regard to claim 17,

Shiiki et al. disclose a color display unit according to claim 16, having the fluorescent substance for display unit as the green light-emitting fluorescent substance..

While Shiiki et al. do not disclose a unit wherein the fluorescent screen contains a blue light-emitting fluorescent substance, a green light-emitting fluorescent substance and a red light-emitting fluorescent substance, such a screen containing red, blue and green fluorescent substances was well known to those of ordinary skill in the art at the time of the invention to enable a wide range of colors to be displayed and therefore would have been obvious to the same.

With regard to claim 18,

Shiiki et al. disclose a color display unit according to claim 17, comprising a color cathode ray tube or a field emission type display unit.

With regard to claim 19,

Shiiki et al. disclose a color display unit according to claim 16, having the fluorescent substance for display unit as at least either of the blue light-emitting fluorescent substance and the green light-emitting fluorescent substance.

While Shiiki et al. do not disclose a unit wherein the fluorescent screen contains a blue light-emitting fluorescent substance, a green light-emitting fluorescent substance and a red light-emitting fluorescent substance, such a screen containing red, blue and green fluorescent

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substances was well known to those of ordinary skill in the art at the time of the invention to enable a wide range of colors to be displayed and therefore would have been obvious to the same.

With regard to claim 20,

Shiiki et al. disclose a color display unit according to claim 19, comprising a color cathode ray tube.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USPN 4874985.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER M. RAABE whose telephone number is (571)272-8434. The examiner can normally be reached on m-f 7am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Peter J Macchiarolo/
For Chris Raabe, Art Unit 2879

/CR/